

Naming Compounds



What's in a name? That which we call a rose
By any other name would smell as sweet."

- William Shakespeare, Romeo and Juliet (II, ii)

Ionic compounds (metal with 1 valence)

Rules for naming

- Metal (+ ion) comes 1st (not chlorine sodide)
- Non metals names end in -ide.
 - Example: sodium chloride
- Do not capitalized unless starting a sentence

Give formula & name: Ca + I, O + Mg, Na + S

= $\text{Ca}^2\text{I}^1 = \text{CaI}_2 = \text{calcium iodide}$

= $\text{Mg}^2\text{O}^2 = \text{MgO} = \text{magnesium oxide}$

= $\text{Na}^1\text{S}^2 = \text{Na}_2\text{S} = \text{sodium sulfide}$

Rules for Transition Metals

- Many transition metals have more than one oxidation. Indicate the particular oxidation by using parenthesis
- Ex. Fe_2O_3 vs. FeO
- Iron (III) Oxide vs. Iron(II) Oxide

Compounds containing polyatomic ions

- So far we have given valences to single atoms
- $\text{Ba}_3(\text{PO}_4)_2$ = Barium Phosphate
- Naming compounds with polyatomic ions is similar to naming other ionic compounds
- You should note that compounds with polyatomic ions have names ending in -ate or -ite not -ide
- Name: $\text{Ca}(\text{OH})_2$, CuSO_4 , NH_4NO_3 , $\text{Co}_2(\text{CO}_3)_3$

Compounds containing polyatomic ions

$\text{Ca}(\text{OH})_2$ - calcium hydroxide

CuSO_4 - copper(II) sulfate

NH_4NO_3 - ammonium nitrate

$\text{Co}_2(\text{CO}_3)_3$ - cobalt(III) carbonate